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ABSTRACT

In order to facilitate research on the construct of causal attribution, this paper details developmental procedures used to minimize previous deficiencies and proposes a new scale. The first version of the scale was in ipsative form and provided two basic sets of indices: (1) ability, effort, luck, and task difficulty indices in success and failure conditions; and, by summation, (2) ability, effort, luck, and task difficulty indices without regard to performance conditions. The present scale was developed to eliminate the statistical problems inherent in the forced-choice, ipsative format of the first version. This revision simulates the original pairing of items across situations. The revised scale was completed by 71 undergraduate education students and examined as to its relationship to their self-reported ACT scores, grade point averages, and preferred class assignments. Results indicated: (1) the higher the ACT scores are reported to be, the more likely high ability is perceived as a major reason for success; and (2) the more that traditional assessment is preferred over short-duration, behavioral assessment, the more that effort is used to explain success. Abbreviated forms of the initial scale and the revised instrument are appended. (RI)

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Causal Attribution: A New Scale Developed to Minimize
Existing Methodological Problems

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Paper presented at SERA, February 1980

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As research in the area of causal attribution proliferates, the disparity of the findings becomes evident. Cohesiveness is lacking in the data, and there is little support for a general nomological network related to the construct. At the core of this problem is the lack of an appropriate instrument which can be used to explore the construct of causal attribution. Weiner (1979) has indicated that individuals responding to his scale have serious difficulty determining to which attributional factor statements pertain. In a related issue, Edwards (1957) has indicated that in self-report inventories there is a correlation of .80 to .90 between the social acceptability of a particular response and the choice of that response. Anastasi (1976) has suggested that an ipsative-type measure is a possible solution to the problems resulting from social acceptability. However, the use of an ipsative measure creates serious problems in the area of data analysis. Specific concerns relating to multicollinearity have been detailed by Johnston (1972). Prior instrumentation in causal attribution has been deficient in at least one of the following areas: a) certainty as to the attributional categories referenced, b) control of the effects of social desirability, c) efforts made to ascertain the degree of intra-individual consistency across situations, d) research (statistical) utility due to the use of ipsative measures to control social desirability. Further, there has been confusion on the part of researchers and subjects as to whether the frequency or influence of motives were under investigation. In order to facilitate research on the construct of causal attribution this paper details developmental

procedures used to minimize previous deficiencies and proposes a new scale.

Method

Initially, 198 phrases referring to four attributional categories (ability, effort, task difficulty, and luck) were generated. Nine graduate students assigned the phrases to the four attributional categories to which they believed the phrases belonged. Only items with 100% agreement were retained:

Insert Table 1 here

One hundred, thirty-four college students rated the 93 items on a one to seven point, Likert-like social acceptability scale. These students were randomly assigned question stems related to either school, work or interpersonal situations. Randomization was assured by generating three types of stimuli, placing these in consistent order and distributing them to students in that preset order. Twelve item pairs were created; 6 for success conditions and 6 for failure conditions. Item pairs selected were highly correlated ($p < 0.000$) and all within-pair Mean social acceptability differences were non-significant and less than one scale point. The social acceptability of each item was ascertained in school, work, and interpersonal situations for both sexes. In creating the two sets of six pairs, items showing situational or across-sex differences ($p < .05$) in social acceptability were excluded.

The 12 pairs were administered to 137 college students and were again rated on social acceptability. Using a t-test, no significant

within-pair differences ($df.=136$, $p < .05$) in Mean social acceptability were found, and the pairs were retained for use in the scale. Question stems describing school, work, or interpersonal (social) situations were also retained. This first version of the scale was in ipsative form and provided two basic sets of indices: (1) ability, effort, luck, and task difficulty indices in success and failure conditions; and, by summation, (2) ability, effort, luck, and task difficulty indices without regard to performance conditions. All indices were additive as indicated by Tukey's test for non-additivity. Cronback alpha reliability estimates ranged from .63 to .83 for the first set of indices and from .63 to .68 for the second set. These reliability and additivity data were obtained from 80 certified teachers. An abbreviated form of the initial scale, referring to one of the three situations examined is in Appendix I.

The present scale was developed to eliminate the statistical problems inherent in the forced-choice, ipsative format of the first version. This revision simulates the original pairing of items across situations. To retain control of social acceptability, Likert-like items were paired through the use of detailed instructions to the subjects. Instructions and a copy of the revised instrument may be found in Appendix II.

The revised scale was administered to 87 undergraduate education students. Feuquay (1979) reported data which indicate that predictions based on the ipsative scale closely follow those that would be indicated from Bar-Tal's (1978) review of the causal attribution literature. Standardization of the revised scale examined differences in attributions as related to the situation in which they were made (school, work, and interpersonal), the performance outcome to which they referred (success, failure), the type of impact they had (influential, frequent), and the relative im-

port of each attributional category employed (ability, effort, task difficulty, luck). Those analyses, reported in Feuquay and Bull (1979) indicated differences related to situation, performance outcome, type of impact, and attributional category. Therefore, it was determined that it would not be appropriate to collapse data across any of those dimensions. It was decided to initially utilize the school scale to precipitate investigation of the school-related nomological network. Examined was its relationship to individuals' reported ACT score, grade point average (GPA), and preferred class assignments. Additional data compared scores obtained on this scale with those obtained on an alternative causal attribution measure. Sixteen subjects were excluded from the analyses due to their returning incomplete data.

Individuals' ACT scores and GPA were obtained through self report. Reported ACT scores had a mean of 3.3789 and standard deviation of 0.4783; GPA had a mean of 19.2083 and standard deviation of 4.2091. Preferred class assignments were obtained by asking individuals to indicate on a 5-point, Likert-like scale the desirability of each of 20 types of performance evaluations. A principal factor analysis without iteration followed by varimax rotation was used in reducing the preference scale. Five interpretable factors were found as indicated in Table 2. Components of each factor are found in Appendix III.

Insert Table 2 here

Results

The higher individuals report their ACT scores to be, the more likely are they to perceive high ability as a major reason for success. Effort is

less often seen as a major reason for success as ACT scores increase, but effort is more frequently used to explain success. When the individuals in this study fail, the higher their ACT score the more influence lack of effort is seen to have and the less influence the difficulty of the task is perceived to have. (see Table 3)

Insert Table 3 here

The higher their reported GPA, the more frequently individuals say, when successful, that good luck is not a factor and the more frequently they say that the tasks attempted are easy and that they were capable (ability) of performing them. When individuals fail, the higher their GPA, the less frequently do they say that it is due to lack of effort or to hard tasks; and the more frequently they attribute failure to bad luck. The frequency of use of attributions far outweighs its influence in predicting GPA in this sample (see Table 3).

The more individuals prefer traditional or conventional assessment, the more influential they see effort in success and the more often they use it as an explanation. As preference for this type of assessment increases, ability is seen to be less influential though more frequently used to explain success. Increased preference for traditional or conventional forms of assessment is related to perceptions of increased influence of bad luck and decreased influence of lack of effort when failure occurs; attributions to lack of ability become more frequent.

The higher an individual's preference for short-duration, behavioral assessment, the more influence good luck, effort, and low task difficulty, and the less influence ability, are seen to have on success.

Also as that preference increases, the frequency with which bad luck is used to explain failure increases.

As preference for unstructured non-test forms of assessment increases, so does the frequency with which success is attributed to the lack of difficulty of the task. Whether the individual succeeds or fails, lack of difficulty becomes less influential and effort and good luck more influential as preference for this form of assessment increases.

Ability is more frequently used to explain success and is seen as more influential in success as preference for non-traditional, longer-duration forms of assessment increases. Luck also plays an important role; the influence of bad luck in failure and good luck in success increasing as preference for this type of assessment increases. As preference increases, attributions to lack of effort become more frequent and the difficulty of the task is seen as less influential in explaining failure.

Increased preference for structured, non-test forms of assessment is related to perceptions of increased influence of good luck and ability on success. However, attributions of success are frequently made to ability alone. As preference for structured, non-test assessment increases, failure is perceived to be more strongly influenced by and more frequently due to a lack of effort.

Significant, low, positive, correlations, ranging from .22 to .25, were found between an alternative scale and the influence individuals reported ability, effort, task difficulty, and luck as having. These relationships were found for situations in which the individuals succeeded.

Discussion

This scale possesses high content validity; only items which could be consistently ranked as belonging to specific attribution categories were included. The scale is internally consistent within those categories. Previous scales have not allowed us to differentiate between the frequency with which attributions to given causes are made and the amount of influence those causes are perceived to have over the outcome of an event. Preliminary research on the present scale indicated that frequency and influence are indeed different indicators of the ways in which attributions are utilized. The differences are typified by discrepancies in the attribution patterns employed for single-occurrence events versus multiple-occurrence, ongoing events. This is exemplified by differences in the prediction of reported ACT scores and GPA from the present scale. For the ACT, a solitary event, individuals rely heavily on the influence of ability, task difficulty, and effort in explaining their success or failure. For GPA, an accumulation of multiple events, the frequency of attributions to ability, task difficulty, and luck is paramount.

Different patterns are also seen in predicting preference for varying types of class assignments. At the extremes are individuals preferring unstructured, non-test assessment (see Factor 3 in Appendix III) and those preferring traditional, conventional assessment (see Factor 1 in Appendix III). Persons having high preference for non-test assessment could be characterized as often saying success is due to the easiness of the tasks while not feeling that the easiness was really influential in their success. Alternatively, persons having high preference for traditional assessment could be characterized as often saying that success is due to high ability while not feeling that ability was influential in their suc-

cess. Both types indicate that the amount of effort expended is very influential in success.

In success conditions, low, significant, positive correlations were found for each attributional category between the influence scale and an alternative attribution measure. The meager correlations may reflect both subjects' confusion as to whether influence or frequency were being requested and the lack of control over social desirability in the alternative scale. One or both problems have existed in the vast majority of previously developed scales. The pattern of the correlations of this scale with an alternative attribution measure indicates that individuals previously may have been reporting the influence of varying causes, thus screening out the frequency with which causes were utilized.

Further research is necessary to demonstrate the relationships between this instrument and other measures of school success and failure. Further concurrent and construct validity studies are needed to increase confidence in use of this scale in predicting behavior based on both the frequency and influence of causal attributions. Additional research is being conducted in the mentioned areas and to examine situational differences in attribution.

Distribution of Items with Total Agreement

	Ability	Effort	Luck	Task
Success	15	17	12	11
Failure	12	10	9	9

Table 1

Factor Analysis of Preferred Class Assignments

Factor	Assigned Name	Eigenvalue	% Variance	Cumulative %
1	Traditional or conventional assessment	4.075	20.4	20.4
2	Short duration behavioral assessment	2.431	12.2	32.5
3	Unstructured non-test assessment	1.685	8.4	41.0
4	Non-traditional longer duration assess't	1.533	7.7	48.6
5	Structured non-test assessment	1.384	6.9	55.5

Table 2

Regression Summary Table

Predicted Variable	R ²	df	F
ACT	.256	10,61	2.10*
GPA	.270	11,60	2.02*
AF1	.288	12,59	1.99*
AF2	.258	10,61	2.13*
AF3	.332	14,57	2.02*
AF4	.304	13,58	1.75*
AF5	.206	8,63	2.04*

*P < .05

Table 3

References

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APPENDIX I

Abbreviated Form of the Initial Scale

On this sheet are four situations. Each of the situations is followed by six pairs of possible reasons for the situation occurring. You are to pick the one reason in each pair that fits YOU best. Indicate your choice by circling "A" or "B" on each pair. Remember, you are describing YOURSELF.

1. When I am successful on an examination, it is mainly because:

- A. I really strained at it. OR
- B. I am good at it
- A. I used a lot of energy or
- B. The problems were few
- A. I was lucky OR
- B. I really strained at it
- A. The problems were few OR
- B. I have a talent in that area
- A. I was fortunate OR
- B. The problems were few
- A. I am clever OR
- B. I was fortunate

3. When I do well on a written assignment, it is mainly because:

- A. The problems were few OR
- B. I have a talent in that area
- A. I was fortunate OR
- B. The problems were few
- A. I am clever OR
- B. I was fortunate
- A. I really strained at it. OR
- B. I am good at it
- A. I used a lot of energy OR
- B. The problems were few
- A. I was lucky OR
- B. I really strained at it

2. When I do poorly on a written assignment, it is mainly because:

- A. I am not masterful when it comes to that OR
- B. What was required was very difficult
- A. The functions were extreme OR
- B. Things were unfavorable
- A. I don't have the aptitude for it OR
- B. I didn't have the opportunities
- A. I was not as careful as usual OR
- B. It was a hard task
- A. I didn't try very hard OR
- B. I am not talented in that area
- A. I didn't labor with it OR
- B. I didn't have the opportunities

4. When I do poorly on an examination, it is mainly because:

- A. I was not careful as usual OR
- B. It was a hard task
- A. I didn't try very hard OR
- B. I am not talented in that area
- A. I didn't labor with it OR
- B. I didn't have the opportunities
- A. I am not masterful when it comes to that
- B. What was required was very difficult
- A. The functions were extreme OR
- B. Things were unfavorable
- A. I don't have the aptitude for it OR
- B. I didn't have the opportunities

Appendix II

Instructions and Revised Instrument

The purpose of this questionnaire is to develop a measurement instrument. You are not being tested or evaluated. Therefore you should not put your name or ID number on the answer sheet.

Because we are interest in determining the characteristics of the test, please answer all questions honestly.

Directions:

On your answer sheet write your age, sex, ACT score and last semester's GPA in the columns indicated in the example below:

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On each of the following pages are two situations. Each of the situations is followed by pairs of possible reasons for the situations occurring.

Consider each pair of reasons separately and for each reason in the pair indicate both the amount of influence and the frequency that that reason normally would have in your life.

FOR EXAMPLE

<u>Reason</u>	<u>Influence</u>					<u>Frequency</u>				
	Not a reason	Minor reason	Major reason	NEVER	Some times	Always				
I really strained at it.	67. A	B	C	D	E	69. A	B	C	D	E
I am good at it	68. A	B	C	D	E	70. A	B	C	D	E

For this pair you would read both reasons and determine how much influence each would have on you. You would code your response in blocks 67 and 68 of the answer sheet

You would then determine how frequently each of those reasons influence you. This you would code in the next two answer spaces, 69 and 70.

Then you would move on to the next pair of reasons.

Situation: When I am UNSECCESFUL in SCHOOL, it is because:

<u>REASONS</u>	<u>Influence</u>					<u>Frequency</u>				
	Not a reason	Minor reason	Major reason			Never	Some- times	Always		
I was not as careful as usual	139. A	B	C	D	E	141. A	B	C	D	E
It was a hard task	140. A	B	C	D	E	142. A	B	C	D	E
	Not a reason	Minor reason	Major reason			Never	Some- times	Always		
I didn't try very hard	143. A	B	C	D	E	145. A	B	C	D	E
I am not talented in that area	144. A	B	C	D	E	146. A	B	C	D	E
	Not a reason	Minor reason	Major reason			Never	Some- times	Always		
I didn't labor with it	147. A	B	C	D	E	149. A	B	C	D	E
I didn't have the opportunities	148. A	B	C	D	E	150. A	B	C	D	E
	Not a reason	Minor reason	Major reason			Never	Some- times	Always		
I am not masterful when it comes to that	151. A	B	C	D	E	153. A	B	C	D	E
What was required was very difficult	152. A	B	C	D	E	154. A	B	C	D	E
	Not a reason	Minor reason	Major reason			Never	Some- times	Always		
The functions were extreme	155. A	B	C	D	E	157. A	B	C	D	E
Things were unfavorable	156. A	B	C	D	E	158. A	B	C	D	E
	Not a reason	Minor reason	Major reason			Never	Some- times	Always		
I don't have the aptitude for it	159. A	B	C	D	E	161. A	B	C	D	E
I didn't have the opportunities	160. A	B	C	D	E	162. A	B	C	D	E

Situations: When I am SECCESFUL in SCHOOL, it is because:

<u>REASONS</u>	<u>Influence</u>					<u>Frequency</u>				
	Not a reason	Minor reason	Major reason			Never	Some- times	Always		
I really strained at it I am good at it	163. A	B	C	D	E	165. A	B	C	D	E
	164. A	B	C	D	E	166. A	B	C	D	E
I used a lot of energy The problems were few	167. A	B	C	D	E	169. A	B	C	D	E
	168. A	B	C	D	E	170. A	B	C	D	E
I was lucky really strained at it	171. A	B	C	D	E	173. A	B	C	D	E
	172. A	B	C	D	E	174. A	B	C	D	E
The problems were few I have talent in that area	175. A	B	C	D	E	177. A.	B	C	D	E
	176. A	B	C	D	E	178. A	B	C	D	E
I was fortunate The problems were few	179. A	B	C	D	E	181. A	B	C	D	E
	180. A	B	C	D	E	182. A	B	C	D	E
I am clever I was fortunate	183. A	B	C	D	E	185. A	B	C	D	E
	184. A	B	C	D	E	186. A	B	C	D	E

Appendix III

Partial Listing of Assignment Preference Factor Components

<u>Factor 1: Traditional or Conventional Assessment</u>	<u>LOADING</u>
Completion or short answer exam	.80
Group class presentation	.75
Individual class presentation	.74
Multiple choice exam	.70
True/False exam	.60
 <u>Factor 2: Short Duration Behavioral Assessment</u>	 <u>LOADING</u>
Class participation	.84
Individual performance test	.78
Individual term paper	-.48
 <u>Factor 3: Unstructured Non-Test Assignment</u>	 <u>LOADING</u>
Informal observations by the teacher	.83
Field Experiences	.68
Contract for the grade you want	.54
 <u>Factor 4: Nontraditional Longer Duration Assessment</u>	 <u>LOADING</u>
Group performance test	.77
Projects	.53
Contract for the grade you want	.47
 <u>Factor 5: Structured Non-Test Assessment</u>	 <u>LOADING</u>
Lab Work	.82
Homework	.78